



**Department
of Health**

Comparison of 8-Milligram and 4-Milligram Intranasal Naloxone Administration by Law Enforcement

Background

- New York implemented law enforcement naloxone in 2014
- Each time naloxone is administered, law enforcement agencies submit a detailed report
- New York State Police contributes the largest number of reports among New York law enforcement agencies (about 360 reports per year)

Background

- Most naloxone administered by law enforcement since 2017 was 4 mg intranasal formulation
- The Food and Drug Administration approved an 8 mg intranasal naloxone product in 2021
 - No real-world data available
 - Concern from harm reduction advocates

Evaluation Aims

- Make the first real-world comparisons of survival, average doses administered, prevalence of post-naloxone signs and symptoms, and hospital transport among individuals administered 8 mg vs. 4 mg naloxone
- Inform decisions by New York State Department of Health's Opioid Overdose Prevention Program

Methods

- March 2022: 3 of 11 troops carried 8 mg and the others continued to carry 4 mg
- Troopers undergo annual training on overdose response, and cardiopulmonary resuscitation, and automated external defibrillator use
- Reports reviewed in-depth at regular team meetings (included two physicians)
- When needed, body worn camera footage review conducted at the Police Academy

Exclusion Criteria

- Opioid toxidrome not present
- Multiple naloxone formulations used by law enforcement
- Aided likely deceased before naloxone was administered
 - Determined using a combination of body worn camera footage, responder reports, and defibrillator reports

Statistical Methods

- Compared average dose numbers with t-test
- Compared survival, post-naloxone symptoms, anger/combativeness, and hospital transport with relative risk

Results

- Between March 1, 2022, and August 16, 2023, 354 reports met inclusion criteria (8 mg=101; 4 mg=253)
- No difference in survival
- Average number of doses administered did not differ by formulation (p=0.27)
 - 8 mg: Mean=1.58 (95% CI:1.45-1.72)
 - 4 mg: Mean=1.67 (95% CI: 1.59-1.75)

Indicator	4 mg naloxone (% (n)) (Reference)	8 mg naloxone (% (n))	Relative risk (95% confidence interval)
Survived	99.2% (248)	99.0% (100)	0.81(0.07-8.99)
Perceived anger/combativeness	7.9% (20)	10.9% (11)	1.42 (0.66- 3.09)
Refused transport to hospital	26.6% (66)	19.0% (19)	0.65 (0.36 -1.15)
Post-naloxone sign or symptom			
Withdrawal symptoms (including vomiting)	19.4% (49)	37.6% (38)	2.51 (1.51-4.18)*
Vomiting only	13.8% (35)	20.8% (21)	1.64 (0.90-2.98)
Disorientation	58.5% (148)	66.3% (67)	1.40 (0.86- 2.27)
Lethargy	43.5% (110)	52.5% (53)	1.44 (0.90- 2.28)

* Statistically significant at the $p < 0.05$ level

Conclusions

- No difference in survival
- No significant difference in number of doses administered suggests increased dosage might have been unnecessary
- Significantly higher risk of post-naloxone withdrawal symptoms among people administered 8 mg

Acknowledgements

- Co-authors: Emily Payne, MSPH, Dr. Sharon Stancliff, Dr. Michael Dailey, Kirsten Rowe, and Sgt. Jason Christie
- Andrei Chell and Mark Hammer, NYSDOH
- Mark Faul
- New York State Police Troopers

Questions, comments?

Sharon Stancliff, MD

Sharon.Stancliff@health.ny.gov

Emily Payne, MSPH

Emily.Payne@health.ny.gov

Full Paper: <https://www.cdc.gov/mmwr/volumes/73/wr/mm7305a4.htm>